Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of claims:

Claim 1 (Currently amended) A light path extending between first and second zones that are sealed relative to each other by a sealing gasket, said light path comprising at least one optical fiber ~~and being characterized in that~~ , said optical fiber being ~~is~~ provided with a metal coating and ~~passes~~ passing through said sealing gasket.

Claim 2 (Currently amended) The light path according to claim 1 ~~characterized in that~~ wherein said sealing gasket is adapted to withstand a difference between a first pressure in said first zone and a second pressure in said second zone.

Claim 3 (Currently amended) The light path according to claim 2, ~~characterized in that~~ wherein said first pressure is substantially equal to atmospheric pressure and said second pressure is substantially equal to a pressure inside a production tube extending in a well passing through geological formations.

Claim 4 (Currently amended) The light path according to claim 2, ~~characterized in that~~ wherein said difference between said first and second pressures is within a range of 0-40,000 psi.

Claim 5 (Currently amended) The light path according to claim 1, ~~characterized in that~~ wherein said sealing gasket is mounted within a feedthrough (6).

Claim 6 (Currently amended) The light path according to claim 1, ~~characterized in that~~ wherein said metal coating comes directly into contact with said sealing gasket (10).

Claim 7 (Currently amended) A light path according to claim 1, ~~characterized in that~~ wherein the sealing gasket (10) is made of ceramic.

Claim 8 (Currently amended) The light path according to claim 7, ~~characterized in that~~ wherein said ceramic is compacted around said metal coating.

Claim 9 (Currently amended) A light path according to claim 1, ~~characterized in that~~ wherein said first zone (A) is situated inside an optical measurement tool and said second zone is situated outside said tool.

Claim 10 (Currently amended) A light path according to claim 9, ~~characterized in that~~ wherein the second zone is situated inside a production tube extending in a well passing through geological formations, with a petroleum fluid flowing along said production tube.

Claim 11 (Currently amended) A light path according to claim 9, ~~characterized in that~~ wherein the second zone is situated in the cemented annulus lying between the walls of a well passing through geological formations and casing of the well.

Claim 12 (Currently amended) The light path according to claim 1, ~~characterized in that~~ wherein said at least one optical fiber has a first end, situated in the first zone, coupled to a light emitter and a second end, situated in the second zone, coupled to an optical measurement sensor (4).

Claim 13 (Currently amended) A light path according to claim 1, ~~characterized in that~~ wherein said at least one optical fiber has a first end, situated in the first zone, coupled to a light receiver and a second end, situated in the second zone, coupled to an optical measurement sensor.

Claim 14 (Currently amended) The light path according to claims 12, ~~characterized in that~~ wherein said optical fiber directly connects said emitter to said optical sensor.

Claim 15 (Currently amended) The light path according to claims 13, ~~characterized in that~~ wherein said optical fiber directly connects said receiver to said optical sensor.

Claim 16 (Currently amended) A light path according to claim 12, ~~characterized in that~~ wherein the second end of the optical fiber is coupled to said optical measurement sensor via an optical connector.

Claim 17 (Currently amended) A light path according to claim 13, ~~characterized in that~~ wherein the second end of the optical fiber is coupled to said optical measurement sensor via an optical connector.

Claim 18 (Currently amended) The light path according to claim 14, ~~characterized in that~~ wherein said metal coating extending between said emitter and said connector 7.

Claim 19 (Currently amended) The light path according to claim 15, ~~characterized in that~~ wherein said metal coating extending between said receiver and said connector 7.

Claim 20 (Currently amended) A light path according to claim 1, ~~characterized in that~~ wherein a portion of the optical fiber situated in the second zone surrounded by a protective tube that is permeable to said second zone.

Claim 21 (Currently amended) A light path according to claim 1, ~~characterized in that~~ wherein said at least one optical fiber has a first end, situated in the first zone, coupled to an optical connector, said optical connector coupled to a light emitter and to a light receiver via secondary optical fibers, said at least one fiber having a second end, situated in the second zone, coupled to an optical measurement sensor.

Claim 22 (Currently amended) A light path according to claim 16, ~~characterized in that~~ wherein the optical connector comprises a metal ferrule having one end of the optical fiber stuck therein, said end being stripped of the metal coating.

Claim 23 (Currently amended) A light path according to claim 16, ~~characterized in that~~ wherein inside the optical connector the ratio between the sections of the optical fibers is representative of the quantity of light conveyed in each optical fiber.

Claim 24 (Currently amended) The light path according to claim 1, ~~characterized in that~~ wherein said at least one optical fiber includes first and second metal coated optical fibers passing through said sealing gasket, said first and second optical fibers having a first end, situated in first zone, coupled to a light emitter, and a light receiver, respectively, and second end, situated in said second zone, coupled to an optical measurement sensor.

Claims 25 to 50 (Cancelled).